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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/856,769	01/14/2002	David George Leppard	A-21884/A/PCT	2266

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EXAMINER

VOLLANO, JEAN F

ART UNIT	PAPER NUMBER
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1621

DATE MAILED: 07/08/2003

12 ✓

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/856,769

Applicant(s)

LEPPARD ET AL.

Examiner

Jean F. Vollano

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 16-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1,2 and 16-42 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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### DETAILED ACTION

1. The examiner notes that applicant states that claim 16 was canceled in the international prosecution. However claim 16 was submitted in the claims and was not canceled and therefore still is part of the instant application until applicant states that claim 16 is canceled.

#### *Lack of Unity*

2. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1, 17, 18, 19, 20, 21, 22, 23, 25, 27, 28, 29( in part) drawn to the preparation of a P(III) phosphine wherein there is one phosphorus in the phosphine (i.e. n is 1) R1 is not a heterocyclic ring . R2 is a non heterocyclic ring by reacting a compound of formula II with a compound of formula III (same requirement for the R1, R2, and R3) without isolating the intermediates and with the reaction containing an alkali metal or mixtures thereof but no magnesium and without a catalyst. m is 1.

Group II, claim(s) 1, 17, 18, 19, 20, 21, 22, 23, 24, 25, 27, 28, 29( in part) drawn to the preparation of a P(III) phosphine wherein there is one phosphorus in the phosphine (i.e. n is 1) R1 is not a heterocyclic ring. R2 is a non heterocyclic ring, by reacting a compound of formula II with a compound of formula III (same requirement for the R1, R2, and R3) without isolating the

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intermediates and with the reaction containing an alkali metal or mixtures thereof but no magnesium and with a catalyst. M=1

Group III, claim(s) 1, 17, 18, 19, 20, 23, 24, 26, 27, 28, 29( in part) drawn to the preparation of a P(III) phosphine wherein there is one phosphorus in the phosphine (i.e. n is 1) R1 is not a heterocyclic ring. R2 is a non heterocyclic ring, by reacting a compound of formula II with a compound of formula III (same requirement for the R1, R2, and R3) without isolating the intermediates and with the reaction containing magnesium with or without additional group I components and with a catalyst. m is 1.

Group IV, claim(s) 1, 17, 18, 19, 20, 23, 26, 27, 28, 29( in part) drawn to the preparation of a P(III) phosphine wherein there is one phosphorus in the phosphine (i.e. n is 1) R1 is not a heterocyclic ring. R2 is a non heterocyclic ring, by reacting a compound of formula II with a compound of formula III (same requirement for the R1, R2, and R3) without isolating the intermediates and with the reaction containing magnesium with or without additional group I components and without a catalyst. m is 1.

Group V claims 1, 17, 18, 19, 20, 23, 27, 28, 29 drawn to the preparation of a P(III) phosphine wherein there is one phosphorus in the phosphine (i.e. n is 1) wherein at least one R3 or R2 is a heteroring. If this group is chosen then there must be an election of a specific heteroring. There also must be an election of an alkali metal or magnesium and a catalyst or no catalyst for this group. If a catalyst is chosen then claim 24 will be included. m is 1. Claims will be also added if magnesium or alkali metal is chosen.

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Groups VI-X are the same as Groups I-V except  $m$  is 2.

Group XI, claim(s) 1, 17, 18, 19, 20, 21, 22, 23, 25, 27, 28, 29( in part) drawn to the preparation of a P(III) phosphine wherein there is two phosphori in the phosphine (i.e.  $n$  is 2) .  $R_2$  is a non heterocyclic ring or not a moiety wherein there is a heteroatom in the linear portion of the group which attaches the two phosphori together (no hetero atoms in the linker) , by reacting a compound of formula II with a compound of formula III (same requirement for the  $R_2$ , and  $R_3$ ) without isolating the intermediates and with the reaction containing an alkali metal or mixtures thereof but no magnesium and without a catalyst and  $m=1$ .

Group XII, claim(s) 1, 17, 18, 19, 20, 21, 22, 23, 24, 25, 28, 29( in part) drawn to the preparation of a P(III) phosphine wherein there is two phosphorus in the phosphine (i.e.  $n$  is 2)  $R_2$  is a non heterocyclic ring or not moiety wherein there is a heteroatom in the linear portion of the group which attaches the two phosphori together, by reacting a compound of formula II with a compound of formula III (same requirement for the  $R_2$ , and  $R_3$ ) without isolating the intermediates and with the reaction containing an alkali metal or mixtures thereof but no magnesium and with a catalyst and  $m=1$ .

Group XIII, claim(s) 1, 17, 18, 19, 20, 23, 24, 25, 28, 29( in part) drawn to the preparation of a P(III) phosphine wherein there is two phosphorus in the phosphine (i.e.  $n$  is 2).  $R_2$  is a non heterocyclic ring or not moiety wherein there is a heteroatom in the linear portion of the group which attaches the two phosphori together ( no hetroatom in the linking group), by reacting a compound of formula II with a compound of formula III (same requirement for the  $R_2$ ,

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and R3) without isolating the intermediates and with the reaction containing magnesium with or without additional group I components and with a catalyst and  $m=1$ .

Group XIV, claim(s) 1, 17, 18, 19, 20, 23, 25, 27, 28, 29( in part) drawn to the preparation of a P(III) phosphine wherein there is two phosphorus in the phosphine (i.e.  $n$  is 2). R2 is a non heterocyclic ring or not a moiety wherein there is a heteroatom in the linear portion of the group which attaches the two phosphori together, by reacting a compound of formula II with a compound of formula III (same requirement for R2, and R3) without isolating the intermediates and with the reaction containing magnesium with or without additional group I components and without a catalyst and  $m=1$ .

Group XV claims 1, 17, 18, 19, 20, 23, 27, 28, 29 drawn to the preparation of a P(III) phosphine wherein there is one phosphorus in the phosphine (i.e.  $n$  is 2) wherein at least one R3 or R2 is a heteroring. If this group is chosen then there must be an election of a specific heteroring. There also must be an election of an alkali metal or magnesium and a catalyst or no catalyst for this group. If a catalyst is chosen then claim 24 will be included and  $m=1$ .

Groups XVI-XX are the same as Groups XI-XV except that  $m=2$ .

Group XXI, claim(s) 2, 30, 31, 32, 33, 34, 35, 36, 38, 40, 41, 42 ( in part) drawn to the preparation of a P(V) phosphine oxide ( $Z=O$ ) wherein there is one phosphorus in the phosphine oxide (i.e.  $n$  is 1) R1 is not a heterocyclic ring . R2 is a non heterocyclic ring by reacting a compound of formula II with a compound of formula III (same requirement for the R1, R2, and

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R3) without isolating the intermediates and with the reaction containing an alkali metal or mixtures thereof but no magnesium and without a catalyst.  $m$  is 1.

Group XXII, claim(s) 2, 30, 31, 32, 33, 34, 35, 36, 37, 38, 40, 41, 42( in part) drawn to the preparation of a P(V) phosphine oxide ( $Z=O$ ) wherein there is one phosphorus in the phosphine oxide (i.e.  $n$  is 1) R1 is not a heterocyclic ring. R2 is a non heterocyclic ring, by reacting a compound of formula II with a compound of formula III (same requirement for the R1, R2, and R3) without isolating the intermediates and with the reaction containing an alkali metal or mixtures thereof but no magnesium and with a catalyst and  $m=1$ .

Group XXIII, claim(s) 2, 30, 31, 32, 33, 36, 37, 39, 40, 41, 42( in part) drawn to the preparation of a P(V) phosphine oxide ( $Z=O$ ) wherein there is one phosphorus in the phosphine oxide (i.e.  $n$  is 1) R1 is not a heterocyclic ring. R2 is a non heterocyclic ring, by reacting a compound of formula II with a compound of formula III (same requirement for the R1, R2, and R3) without isolating the intermediates and with the reaction containing magnesium with or without additional group I components and with a catalyst.  $m$  is 1.

Group XXIV, claim(s) 2, 30, 31, 32, 33, 36, 39, 40, 41, 42( in part) drawn to the preparation of a P(V) phosphine oxide ( $Z=O$ ) wherein there is one phosphorus in the phosphine oxide (i.e.  $n$  is 1) R1 is not a heterocyclic ring. R2 is a non heterocyclic ring, by reacting a compound of formula II with a compound of formula III (same requirement for the R1, R2, and R3) without isolating the intermediates and with the reaction containing magnesium with or without additional group I components and without a catalyst.  $m$  is 1.

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Group XXV claims 2, 30, 31, 32, 36, 38, 40, 41, 42 drawn to the preparation of a P(V) phosphine oxide ( $Z=O$ ) wherein there is one phosphorus in the phosphine oxide (i.e. n is 1) wherein at least one R3 or R2 is a heteroring. If this group is chosen then there must be an election of a specific heteroring. There also must be an election of an alkali metal or magnesium and a catalyst or no catalyst for this group. If a catalyst is chosen then claim 39 will be included and m is 1. Also if magnesium is chosen the claim 37 is added and the alkali metal claims are withdrawn.

Groups XXVI-XXX are the same as Groups I-V except m is 2.

Group XXXI, claim(s) 2, 30, 31, 32, 33, 34, 35, 36, 38, 40, 41, (in part) drawn to the preparation of a P(V) phosphine oxide ( $Z=O$ ) wherein there is two phosphori in the phosphine oxide (i.e. n is 2). R2 is a non heterocyclic ring or not a moiety wherein there is a heteroatom in the linear portion of the group which attaches the two phosphori together, by reacting a compound of formula II with a compound of formula III (same requirement for the R2, and R3) without isolating the intermediates and with the reaction containing an alkali metal or mixtures thereof but no magnesium and without a catalyst and  $m=1$ .

Group XXXII, claim(s) 2, 30, 31, 32, 33, 34, 35, 36, 37, 38, 40, 41, (in part) drawn to the preparation of a P(V) phosphine oxides ( $Z=O$ ) wherein there is two phosphorus in the phosphine oxide (i.e. n is 2) R2 is a non heterocyclic ring or not a moiety wherein there is a heteroatom in the linear portion of the group which attaches the two phosphori together, by reacting a compound of formula II with a compound of formula III (same requirement for the R2,



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and R3) without isolating the intermediates and with the reaction containing an alkali metal or mixtures thereof but no magnesium and with a catalyst and  $m=1$ .

Group XXXIII, claim(s) 2, 30, 31, 32, 33, 36, 37, 38, 40, 41, ( in part) drawn to the preparation of a P(V) phosphine oxide ( $Z=O$ ) wherein there is two phosphorus in the phosphine oxide (i.e.  $n$  is 2). R2 is a non heterocyclic ring or not a moiety wherein there is a heteroatom in the linear portion of the group which attaches the two phosphori together, by reacting a compound of formula II with a compound of formula III (same requirement for the R2, and R3) without isolating the intermediates and with the reaction containing magnesium with or without additional group I components and with a catalyst and  $m=1$ .

Group XXXIV, claim(s) 2, 30, 31, 32, 33, 36, 38, 40, 41( in part) drawn to the preparation of a P(V) phosphine oxide  $Z=O$  wherein there is two phosphorus in the phosphine oxide (i.e.  $n$  is 2). R2 is a non heterocyclic ring or not a moiety wherein there is a heteroatom in the linear portion of the group which attaches the two phosphori together, by reacting a compound of formula II with a compound of formula III (same requirement for R2, and R3) without isolating the intermediates and with the reaction containing magnesium with or without additional group I components and without a catalyst and  $m=1$ .

Group XXXV claims 2, 30, 31, 32, 33, 34, 35, 36, 38, 40, 41 drawn to the preparation of a P(III) phosphine wherein there is one phosphorus in the phosphine (i.e.  $n$  is 2) wherein at least one R3 or R2 is a heteroring. If this group is chosen then there must be an election of a specific

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heteroring. There also must be an election of an alkali metal or magnesium and a catalyst or no catalyst for this group. If a catalyst is chosen then claim 24 will be included and  $m=1$ .

Groups XXXVI-XL are the same as Groups XXXI-XXXV except that  $m=2$ .

Groups XLI-LX are the same as Groups XX-XL except that phosphine sulfides wherein  $Z=S$  are being prepared.

Group LXI any processes that do not fall into groups I-LX. This group if chosen will require further restriction.

Group LXI Claim 16, drawn to a compound in claim 1 or 2. Note that this is a product by process limitation and the product does not have to be made by the same process and therefore any known compound being prepared by any way will meet the limitations of this Group. See MPEP 2113.

3. The inventions listed as Groups do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

Group LXII is drawn to compounds which are known and found in the prior art cited in the PCT report of this 371 application. Therefore there is no special technical feature which unites the compounds and the method of preparing the compounds.

Groups I-LX are all different processes for making structurally different compounds by using structurally different starting materials which various different chemical requirements

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which include having a catalyst or not having catalyst, having a alkali metal reagent or having a magnesium reagent. The processes can make phosphines, diphosphines, phosphine oxides, diphosphine oxides, diphosphine sulfides, phosphine sulfides which have one or two carbonyl groups and which can or cannot be attached by various ligands to different phosphorus moieties.

There is no special technical feature which links these various processes, nor is there any unity of invention between the processes since a process requires “ a compound, a method of making the compound” etc. There must be both a special technical feature and unity of invention for there not to be a lack of unity. The instant groups do not have a special technical feature which unites them, nor do they contain unity of invention.

4. A telephone call was made to David Crichton on July 3rd 2003 to discuss an oral election to the above restriction requirement, but did not result in an election being made.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

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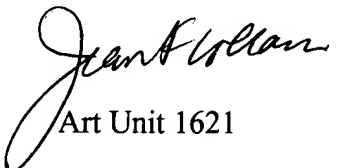
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr J F Vollano whose telephone number is (703) 305-4483. The examiner can normally be reached on Monday to Thursday from 6:30 to 5:00 .

7. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter , can be reached on (703)308-4532 . The official fax phone number for the organization where this application or proceeding is assigned is (703)308-4556. It should be noted that the examiner cannot immediately work on a fax sent to this number.

8. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-1235.

Jean F. Vollano

Primary Examiner

A handwritten signature in black ink, appearing to read "Jean F. Vollano", written in a cursive style.

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July 4, 2003